

# 6AU6-A

## Sharp-Cutoff Pentode

7-PIN MINIATURE TYPE

With Heater Having Controlled Warm-Up Time

### GENERAL DATA

#### Electrical:

Heater, for Unipotential Cathode:

Voltage (AC or DC) . . . . .	6.3	volts
Current at 6.3 volts . . . . .	0.3 ± 6%	amp
Warm-up time (Average) . . . . .	11	sec

Direct Interelectrode Capacitances:

	Without External Shield	With External Shield <sup>A</sup>	
<b>Pentode Connection:</b>			
Grid No.1 to plate . . . . .	0.0035 max.	0.0035 max.	μf
Grid No.1 to cathode, grid No.3 & internal shield, grid No.2, and heater . . . . .	5.5	5.5	μf
Plate to cathode, grid No.3 & internal shield, grid No.2, and heater . . . . .	5	5	μf
<b>Triode Connection:</b> <sup>B</sup>			
Grid No.1 to plate, grid No.3 & internal shield, and grid No.2.	2.6	2.6	μf
Grid No.1 to cathode and heater . . . . .	3.2	3.2	μf
Plate, grid No.3 & internal shield, and grid No.2 to cathode and heater . . . . .	1.2	8.5	μf

#### Characteristics, Class A<sub>1</sub> Amplifier:

##### Pentode Connection

Plate Supply Voltage . . . . .	100	250	250	volts
Grid No.3 . . . . .	Connected to cathode at socket			
Grid-No.2 Supply Voltage . . . . .	100	125	150	volts
Cathode Resistor . . . . .	150	100	68	ohms
Plate Resistance (Approx.) . . . . .	0.5	1.5	1	megohms
Transconductance . . . . .	3900	4500	5200	μmhos
Plate Current . . . . .	5	7.6	10.6	ma
Grid-No.2 Current . . . . .	2.1	3	4.3	ma
Grid-No.1 Voltage (Approx.) for plate μ = 10 . . . . .	-4.2	-5.5	-6.5	volts

##### Triode Connection<sup>B</sup>

Plate Supply Voltage . . . . .	250	volts
Cathode Resistor . . . . .	330	ohms
Amplification Factor . . . . .	36	



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DATA 1  
10-60

# 6AU6-A

Plate Resistance (Approx.) . . . . .	7500	ohms
Transconductance . . . . .	4800	$\mu$ mhos
Plate Current . . . . .	12.2	ma

**Mechanical:**

Operating Position . . . . .	Any
Maximum Overall Length . . . . .	2-1/8"
Maximum Seated Length . . . . .	1-7/8"
Length, Base Seat to Bulb Top (Excluding tip) . . . . .	1-1/2" $\pm$ 3/32"
Diameter . . . . .	0.650" to 0.750"
Dimensional Outline . . . . .	See <i>General Section</i>
Bulb . . . . .	T5-1/2
Base . . . . .	Small-Button Miniature 7-Pin (JEDEC No. E7-1)
Basing Designation for BOTTOM VIEW . . . . .	.7BK

Pin 1 - Grid No.1  
 Pin 2 - Grid No.3,  
 Internal  
 Shield  
 Pin 3 - Heater



Pin 4 - Heater  
 Pin 5 - Plate  
 Pin 6 - Grid No.2  
 Pin 7 - Cathode

**AMPLIFIER — Class A<sub>1</sub>**

**Maximum Ratings, Design-Maximum Values:**

	Triode Connection*	Pentode Connection
PLATE VOLTAGE . . . . .	275 max.	330 max. volts
GRID No.3 (SUPPRESSOR GRID) . . . . .	-	Connect to cathode at socket
GRID-No.2 (SCREEN-GRID) SUPPLY VOLTAGE . . . . .	-	330 max. volts
GRID-No.2 VOLTAGE . . . . .	-	See Grid-No.2 Input Rating Chart at front of Receiving Tube Section
GRID-No.1 (CONTROL-GRID) VOLTAGE: Positive-bias value . . . . .	0 max.	0 max. volts
GRID-No.2 INPUT: For grid-No.2 voltages up to 165 volts . . . . .	-	0.75 max. watt
For grid-No.2 voltages between 165 and 330 volts . . . . .	-	See Grid-No.2 Input Rating Chart at front of Receiving Tube Section
PLATE DISSIPATION . . . . .	3.5 max.	3.5 max. watts
PEAK HEATER-CATHODE VOLTAGE: Heater negative with respect to cathode . . . . .	200 max.	200 max. volts
Heater positive with respect to cathode . . . . .	200* max.	200* max. volts

**Typical Operation as Resistance-Coupled Amplifier:**

See *RESISTANCE-COUPLED-AMPLIFIER CHART No. 8*  
 at front of this Section

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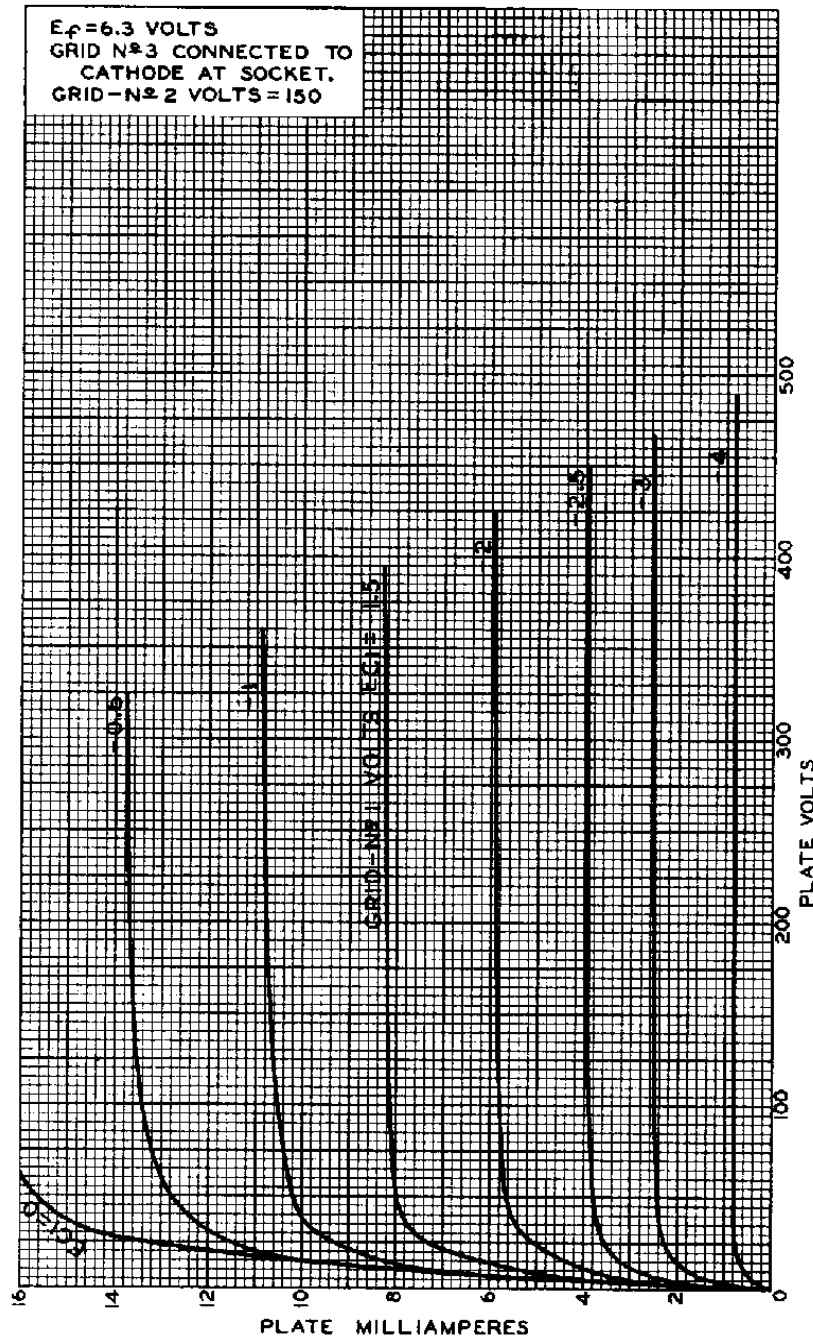


# 6AU6-A

- ▲ With external shield JEDEC No. 316 connected to cathode.
- Grid No.3 and grid No.2 connected to plate.
- \* The dc component must not exceed 100 volts.

# 6AU6-A

## AVERAGE PLATE CHARACTERISTICS Pentode Connection



92CM-5613R3

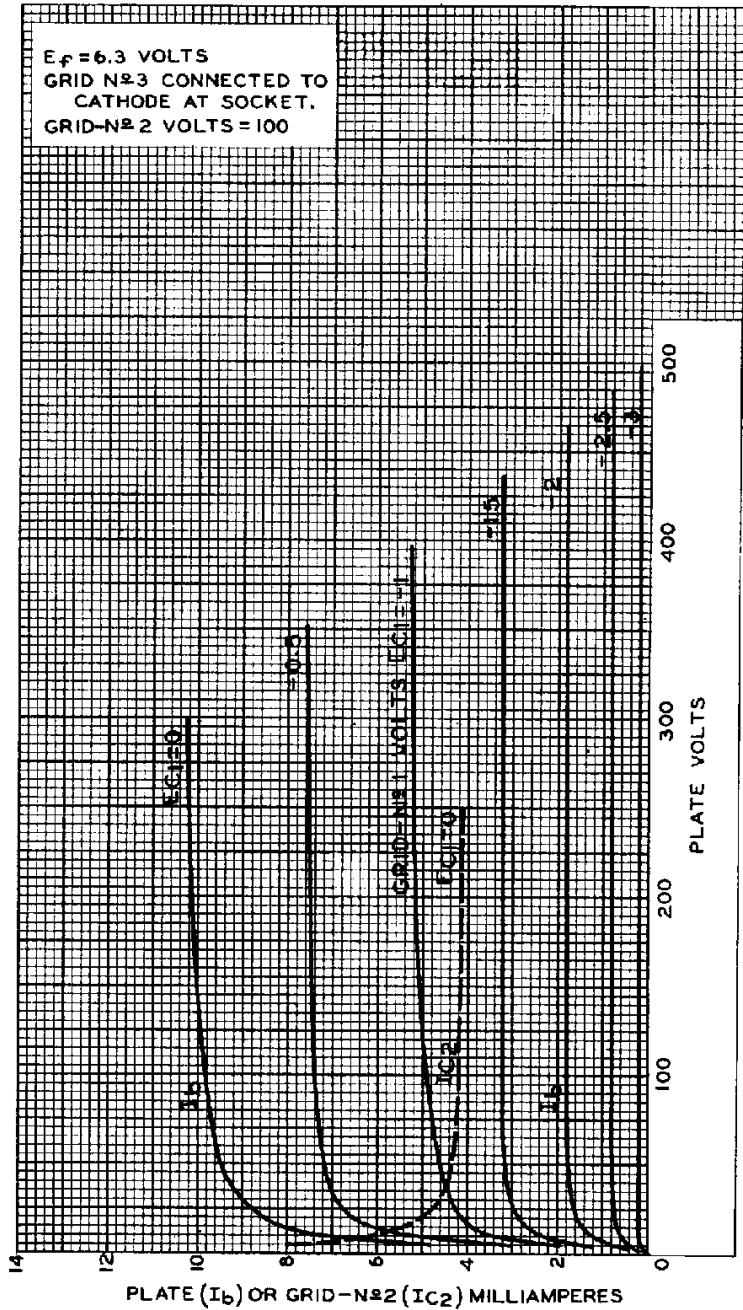
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## AVERAGE CHARACTERISTICS Pentode Connection



92CM-6611R3

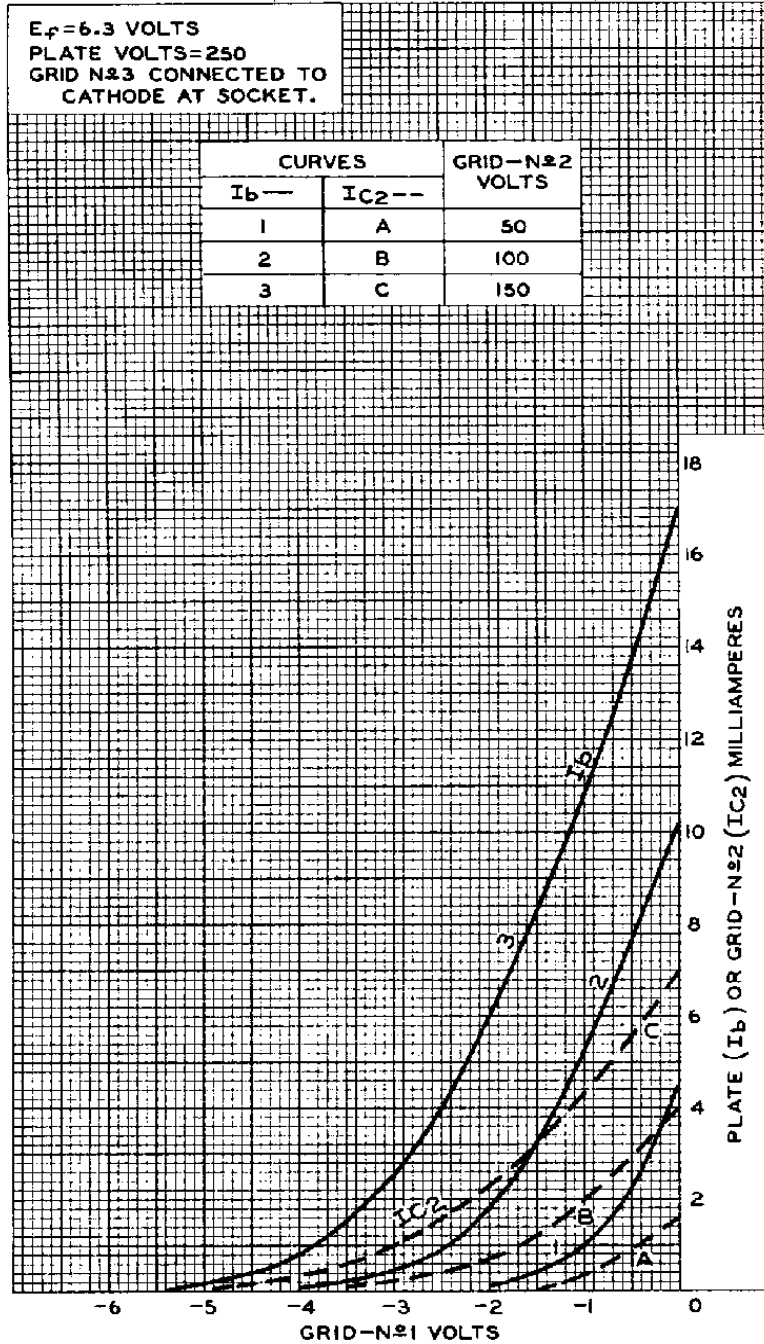


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DATA 3  
10-60

# 6AU6-A

## AVERAGE CHARACTERISTICS Pentode Connection



92CM-6623R3

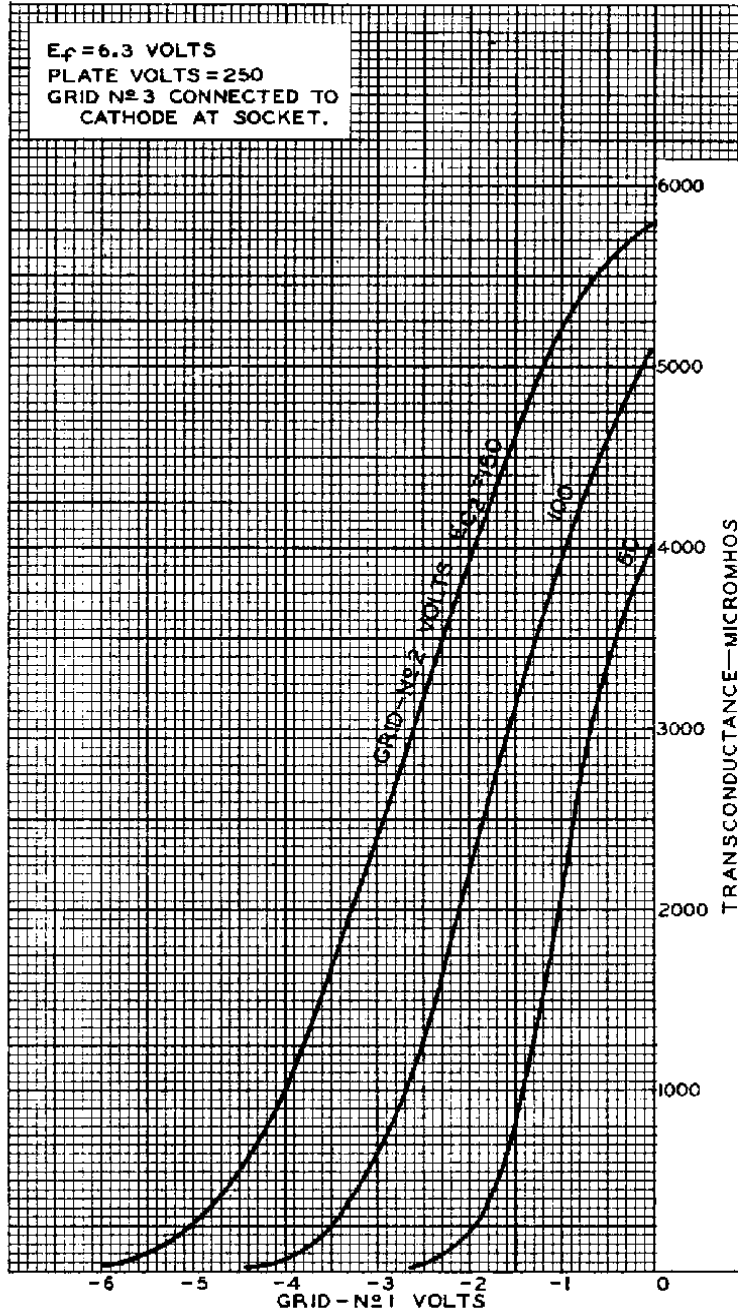
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## AVERAGE CHARACTERISTICS Pentode Connection



92CM-6614R3

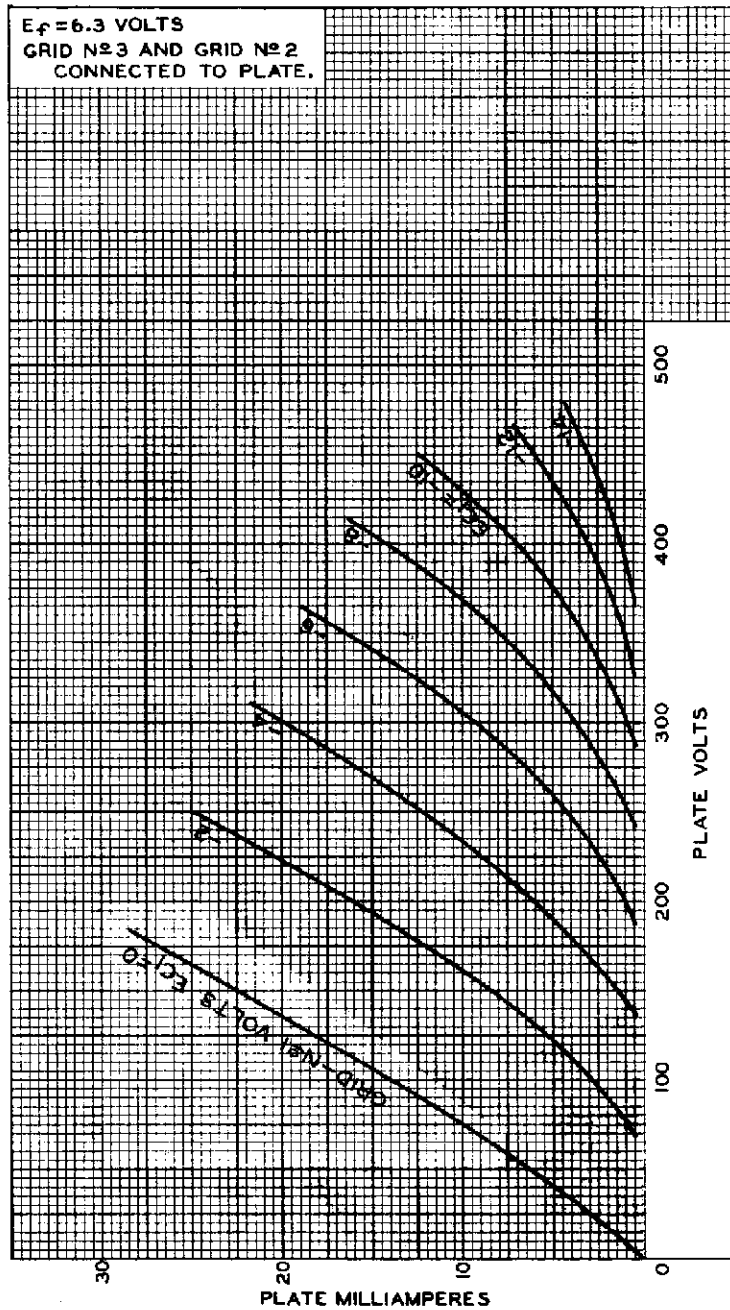


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DATA 4  
10-60

# 6AU6-A

## AVERAGE PLATE CHARACTERISTICS Triode Connection



92CM-6854R1

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